



Published in final edited form as:

Pain. 2009 July ; 144(1-2): 5–6. doi:10.1016/j.pain.2009.03.004.

Placebo Analgesia: Widening the Scope of Measured Influences

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The growing body of literature examining mechanisms of placebo analgesia has demonstrated that there are a number of potential influences that shape an individual's analgesic response to a placebo or, for that matter, to any intervention. Placebo responses are potentially embedded in every intervention for pain relief. These influences include brain mechanisms, psychosocial factors, past learning, and cultural meanings of treatments (Price et al. 2008). The article in this issue by Colloca and Benedetti brings another very important placebo mechanism into view. Colloca and Benedetti demonstrate that when someone observes another individual receiving a successful pain intervention, they also experience pain reduction when they later receive that same intervention. And this happens even when the "intervention" is a simulation of an active therapy. This is an important finding because it has relevance to a wide variety of social settings and contexts. Pain is experienced in both private and public settings. This same group of investigators has shown effects of learning and social influences on the intensity of pain (Colloca et al. 2008a; Colloca et al. 2008b) but the influence of social observation on the placebo response has not been investigated until this study. These findings are consistent with reports of social observation influencing the pain behavior of nonhuman animals (Jordan and Mogil 2006; Langford et al. 2006), suggesting that these observational influences involve rather fundamental processes. For the most part, these social influences have been discussed in terms of modeling pain behavior, or empathic responses to the observation of pain. Colloca and Benedetti maintain that the positive social model just described reflects an enhancement of the placebo component of treatment. If so, then this type of social learning could be combined with established treatments, not just simulations.

Pain sufferers experience their pain in a number of social settings. These include everyday settings involving family, coworkers, friends, and acquaintances. Also included are settings associated with treatment of their pain. For the most part, these healthcare settings represent observational milieu that are not standardized. Clinics, hospitals, physical therapy gyms, and group therapy settings all represent potential for positive observational influences. However, they also represent potential settings for non-therapeutic or nocebo influences. The Colloca and Benedetti results suggest that healthcare providers may want to examine how they can use pro-health observational experiences to influence the effectiveness of their treatments.

The influence of social modeling on the placebo response also has implications for the wide variety of media experienced by the general population and by those who suffer from pain conditions. The Colloca and Benedetti results highlight the potential for commercial media

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and therapeutic multimedia influences and interventions to increase the potency of existing pain treatments. These marketing and modeling interventions may operate through the provision of a context and meaning (Moerman and Jonas 2002) (Moerman 2003) for the placebo component of any treatment. This is again a relatively untapped therapeutic modality that may be available to a wide range of people with pain conditions.

These new data highlight the scope of placebo mediators that includes the whole range from biology to culture. Furthermore, the study demonstrates that all of these constructs (even social observation) are measurable, and are constructs that can be manipulated in experimental designs to yield high quality causal inferences. It is important to remember that the placebo response, in its various manifestations and through its variety of mechanisms, is most likely operating in all treatments. The induction of a placebo through observation of others' deserves additional study as well as careful consideration as an experimental control when examining the isolated effects of a certain intervention.

Just as psychosocial and other environmental determinants of the placebo response are measurable, so are its proximate mediators, which are directly experienced by individuals who receive treatments. These mediators include somatic focus, expectations of pain reduction, reduced desire to seek pain relief, and reduced negative emotions embedded in pain (e.g., anxiety about the pain). Thus, an integrated account of placebo analgesia would be one that explains how environmental factors, including social learning, influence the proximate causes of placebo responses. Neuroscientific studies could be useful in further explaining these interactions, but would never eliminate the psychological constructs needed in the account.

Acknowledgments

The authors certify that they have no conflict of interest associated with this editorial.

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